20020620.5h4.20007

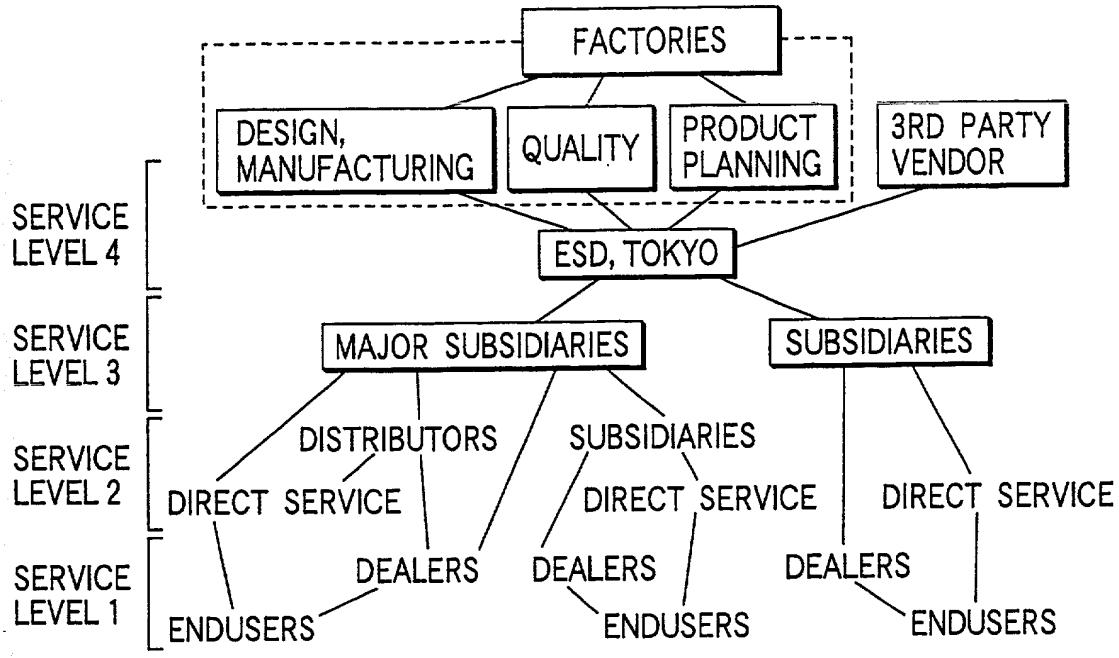

FIG. 1 (PRIOR ART)

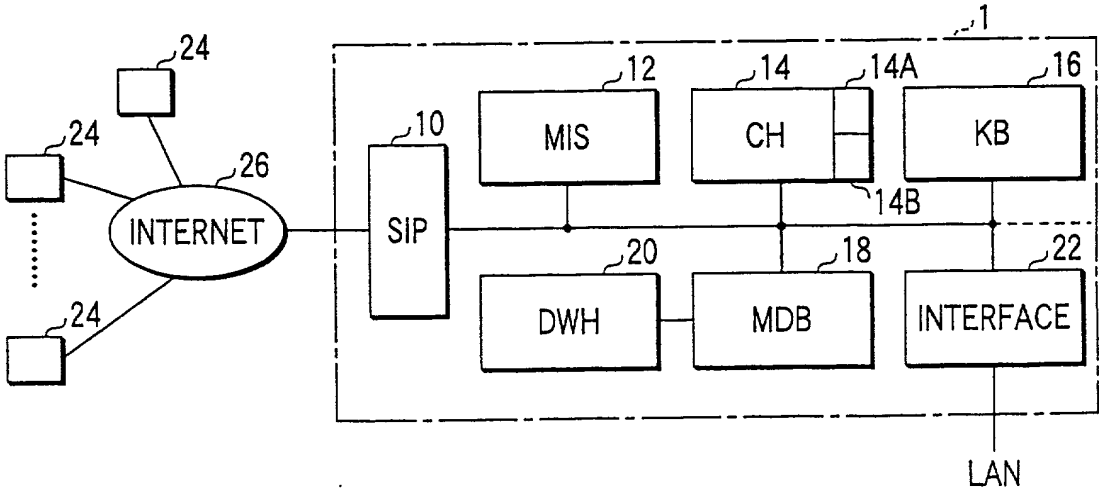

FIG. 2

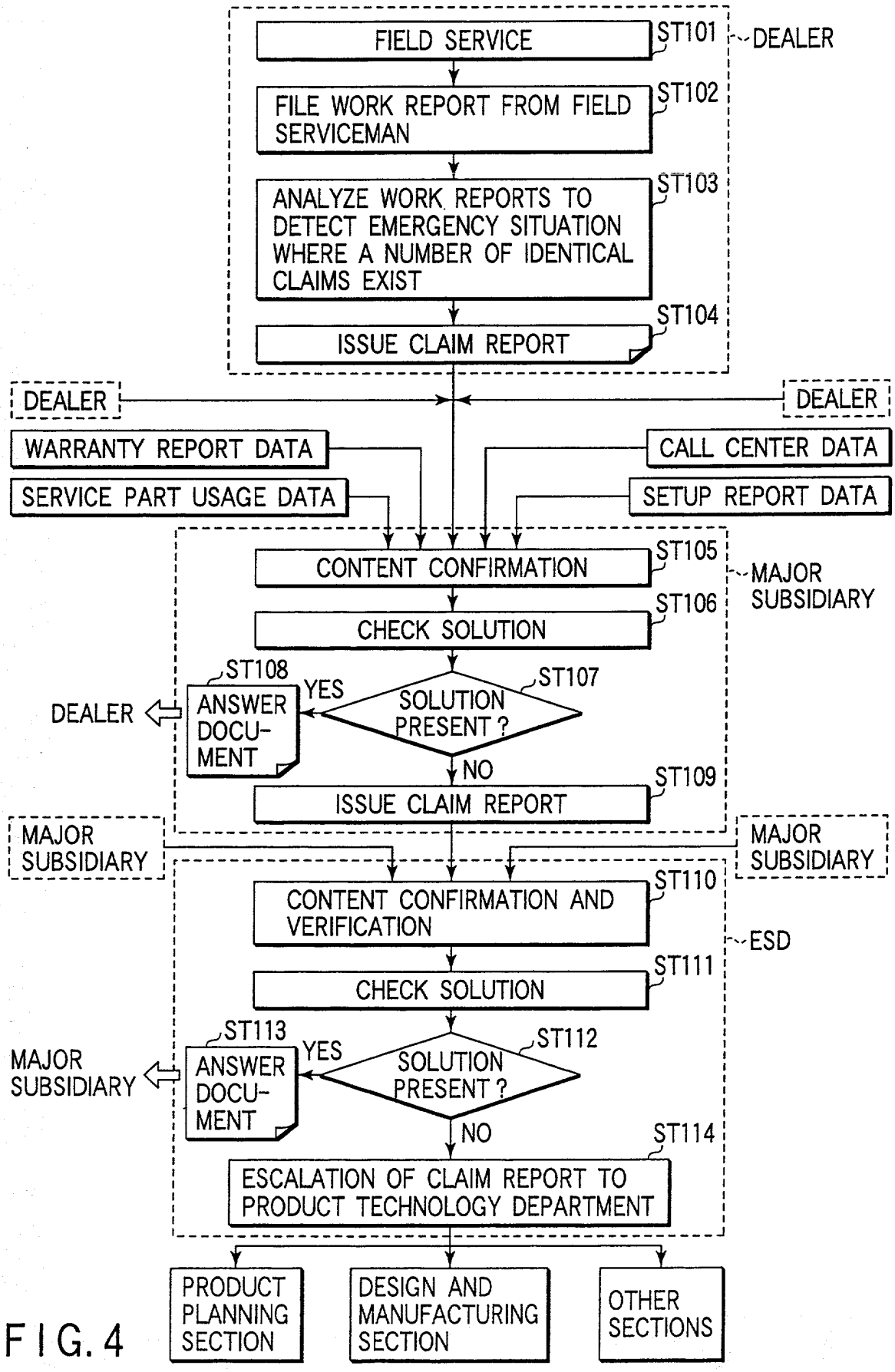
FIELD SERVICE
ST101
DEALER
FILE WORK REPORT FROM FIELD SERVICEMAN
ST102
ANALYZE WORK REPORTS TO DETECT EMERGENCY SITUATION WHERE A NUMBER OF IDENTICAL CLAIMS EXIST
ST103
ISSUE CLAIM REPORT
ST104
DEALER
DEALER
WARRANTY REPORT DATA
CALL CENTER DATA
SERVICE PART USAGE DATA
SETUP REPORT DATA
CONTENT CONFIRMATION
ST105
MAJOR SUBSIDIARY
CHECK SOLUTION
ST106
ST108
ANSWER DOCU-MENT
YES
SOLUTION PRESENT ?
ST107
DEALER
NO
ISSUE CLAIM REPORT
ST109
MAJOR SUBSIDIARY
MAJOR SUBSIDIARY
CONTENT CONFIRMATION AND VERIFICATION
ST110
ESD
CHECK SOLUTION
ST111
ST113
ANSWER DOCU-MENT
YES
SOLUTION PRESENT ?
ST112
MAJOR SUBSIDIARY
NO
ESCALATION OF CLAIM REPORT TO PRODUCT TECHNOLOGY DEPARTMENT
ST114
PRODUCT PLANNING SECTION
DESIGN AND MANUFACTURING SECTION
OTHER SECTIONS

FIG. 4

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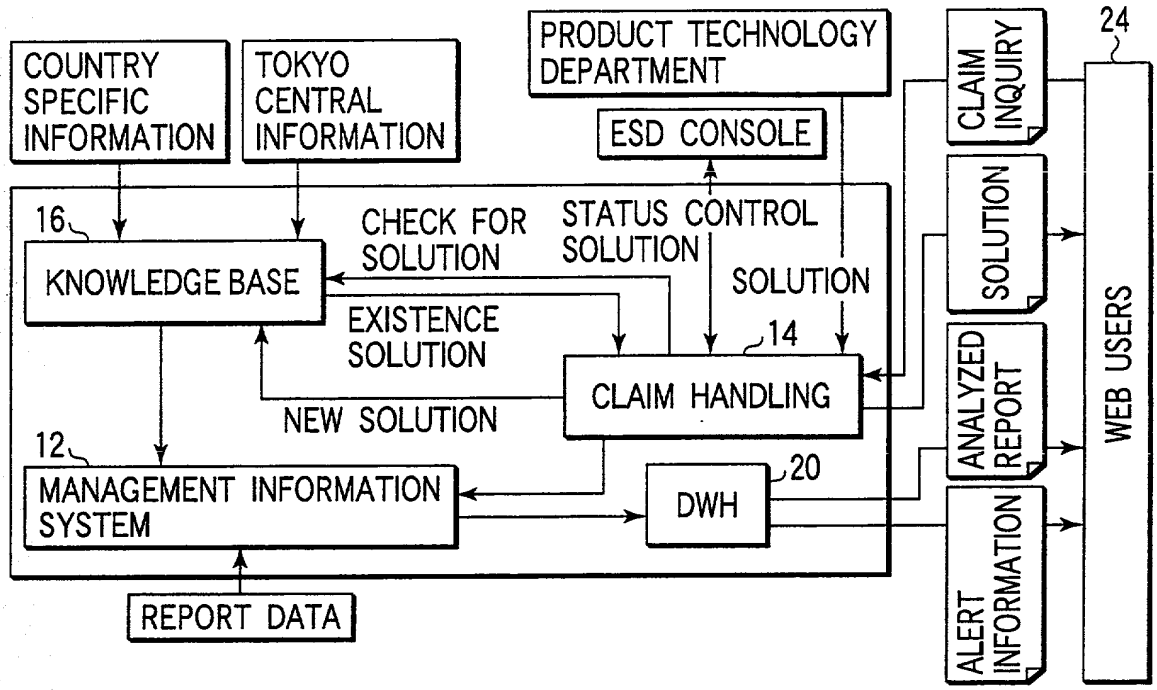

FIG. 3

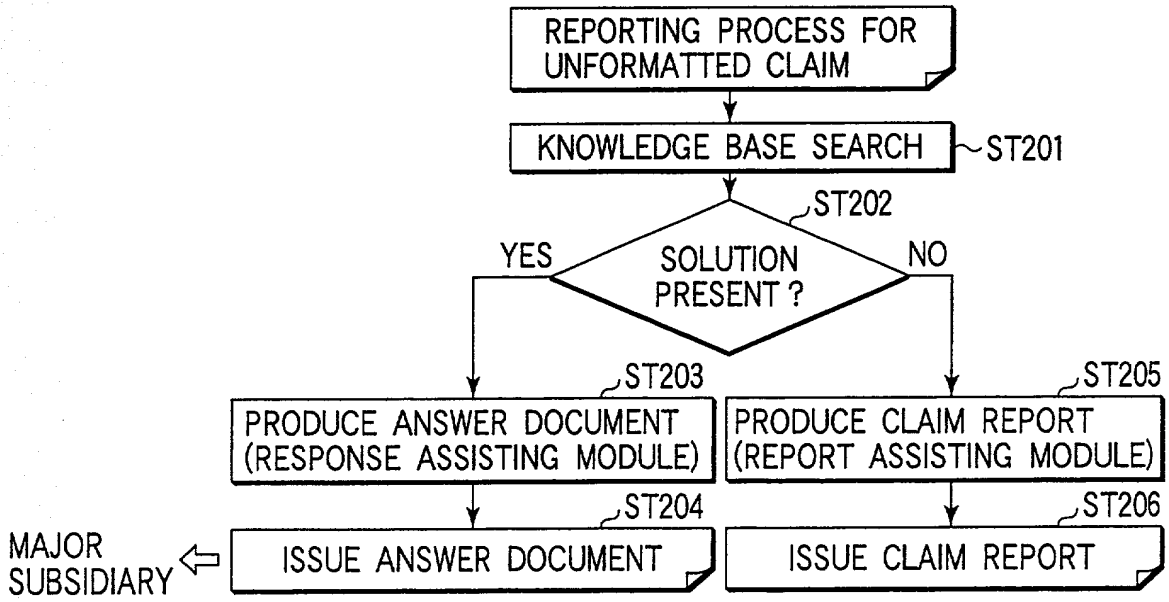

FIG. 5

Problem Type (J)	Problem Type (E)
P01 画像不良	P01 Copy/print image quality
P02 用紙搬送、排出、ジャムカール、しわ	P02 Paper feed/exit, jam, curl, crease
P03 原稿搬送、排出	P03 Original feeding/exiting
P04 異常音、騒音	P04 Abnormal noise
P05 機械部品破損、不具合、外れ、汚れ、錆	P05 Mechanical trouble (breakage, fall off, rust)
P06 機体内汚れ、キャリア落ち、トナー飛散	P06 Contamination M/C inside, carrier/toner spew
P07 製造組み立てミス(誤取付け、欠品)	P07 Assembling failure (Fixing error, missing)
P08 調整不良	P08 Adjustment failure
P09 動作不良、異常動作、異常表示	P09 Erratic operation/display
P10 電気部品不良	P10 Electrical parts failure
P11 操作性、作業性、その他改善、変更要求	P11 Operability, serviceability other request to improve
P12 ライフ末達、消費量関連	P12 Premature life/yeild
P13 プリンター動作不良	P13 Printer operation in general
P14 FAX動作不良	P14 FAX operation failure
P15 輸送ダメージ	P15 Shipping damage
P16 サービスパーツ&消耗品関連	P16 Service parts/supplies
P17 サービス資料関連	P17 Service document
P18 その他	P18 Others

FIG. 6

Unit (J)	Unit (E)
U01 給紙ユニット	U01 Paper feeder unit
U02 オプション給紙ユニット	U02 LCF/PFU/PFP
U03 光学/レーザーユニット	U03 Optional/Laser Unit
U04 ドラム	U04 Drum
U05 チャージャー/グリッド	U05 Charger/Grid
U06 現像器ユニット	U06 Developer unit
U07 トナー/カートリッジ	U07 Toner/Cartridge
U08 クリーナーユニット	U08 Cleaner unit
U09 プロセスユニット全般	U09 Process unit in overall
U10 機体内用紙搬送ユニット	U10 Paper transport unit
U11 定着器ユニット	U11 Fuser unit
U12 排紙ユニット	U12 Exit unit
U13 ADD	U13 ADD
U14 ADF	U14 ADF
U15 ソーター/フィニッシャー	U15 Sorter/Finisher
U16 ドライブユニット	U16 Drive Unit
U17 コンパネユニット	U17 Control Panel unit
U18 PC板、その他電気部品	U18 PWA or other electrical circuit
U19 電源ユニット/高圧トランス	U19 Power supply unit/HVT
U20 HDD/拡張メモリー	U20 HDD/Expanssion memory
U21 ネットワークコントローラー	U21 Network controller
U22 FAX/NCUボード	U22 FAX/NCU board
U23 本体ファームウエア	U23 Firmware in machine
U24 ドライバーソフトウエア	U24 Driver software
U25 ネットワーク環境	U25 Network environment
U26 外装カバー	U26 Exterior covers
U27 梱包箱	U27 Packaging
U28 その他	U28 Others

FIG. 7

Code	Machine Status
E1	Paper jam inside the copier
E2	Paper jam near fuser unit
E3	Paper remaining inside the copier when the main switch is turned on
E4	The front cover is opened during copying
E5	Paper misfeed in LCF and manual feeding and paper jam in front of the aligning roller
E8	Paper misfeed (ADD)
E9	Paper misfeed (pedestal)
EC	Paper misfeed (ADF)
ED	Paper misfeed in ADF transport unit
EE	Paper misfeed in ADF exit / reverse unit
C3	Abnormal serial transmission between main CPU and sub-CPU
C5	The optical system will not initialize ; the optical system is locked
C7	Heat roller thermistor is open-circuited
CB	ADF feed motor locked
CC	ADF transport motor locked
A0	Abnormal signal transmission in PFC interface
A1	Faulty charger wire cleaning operation
A2	ADD malfunction
A3	PFC (paper feed controller) malfunction
A4	Sorter malfunction
A5	Abnormal signal transmission between main CPU and IPC
A6	Abnormal signal transmission in sorter interface
A7	Abnormal signal transmission in ADF interface
A9	Blown exposure lamp or defective AES

FIG. 8

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CLAIM REPORT

a. Report source
b. Rank of importance
c. Claim category
d. Claim title
e. Claim details
f. situation

FIG. 9

c. Claim category
model [DP3580], problem code [P05], unit code [U23],
cause code [C02], error code [E005]

d, Claim title
Paper jam (problem) under the drum (position) due to breakage of the drum sensor (cause)

f. Situation
Troubled part [Part number]
Troubled software [Software number]
Product lot [Serial number indicating factory and produced month]
Copy counter [Total copy count]

e. Claim details
Problem, position/related unit, cause, treatment

FIG. 10

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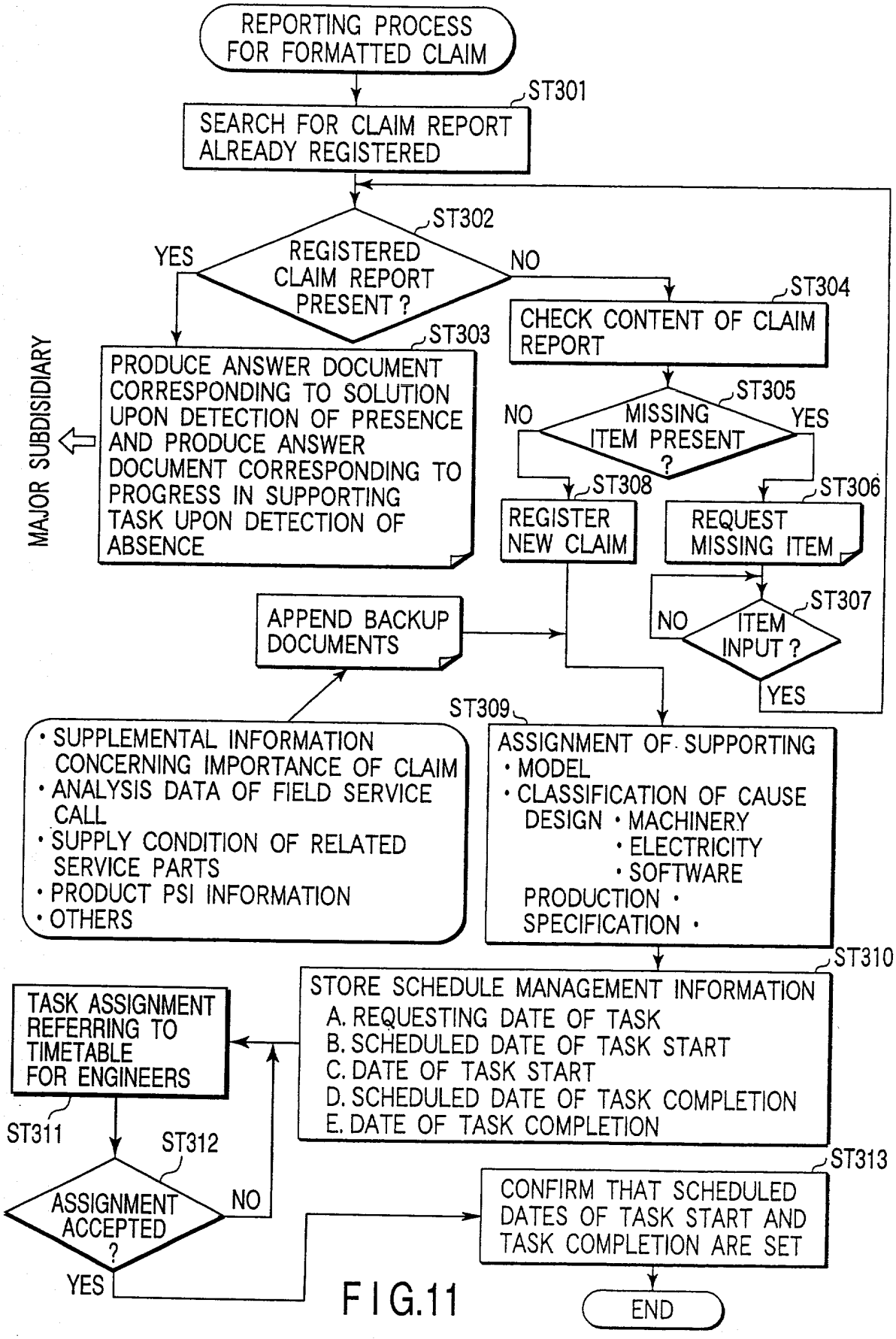
REPORTING PROCESS FOR FORMATTED CLAIM
ST301
SEARCH FOR CLAIM REPORT ALREADY REGISTERED
ST302
REGISTERED CLAIM REPORT PRESENT ?
YES
NO
MAJOR SUBDISIDIARY
ST303
PRODUCE ANSWER DOCUMENT CORRESPONDING TO SOLUTION UPON DETECTION OF PRESENCE AND PRODUCE ANSWER DOCUMENT CORRESPONDING TO PROGRESS IN SUPPORTING TASK UPON DETECTION OF ABSENCE
ST304
CHECK CONTENT OF CLAIM REPORT
ST305
MISSING ITEM PRESENT ?
NO
YES
ST308
REGISTER NEW CLAIM
ST306
REQUEST MISSING ITEM
ST307
ITEM INPUT ?
NO
YES
APPEND BACKUP DOCUMENTS
• SUPPLEMENTAL INFORMATION CONCERNING IMPORTANCE OF CLAIM
• ANALYSIS DATA OF FIELD SERVICE CALL
• SUPPLY CONDITION OF RELATED SERVICE PARTS
• PRODUCT PSI INFORMATION
• OTHERS
ST309
ASSIGNMENT OF SUPPORTING
• MODEL
• CLASSIFICATION OF CAUSE
DESIGN • MACHINERY
• ELECTRICITY
• SOFTWARE
PRODUCTION •
SPECIFICATION •
ST310
STORE SCHEDULE MANAGEMENT INFORMATION
A. REQUESTING DATE OF TASK
B. SCHEDULED DATE OF TASK START
C. DATE OF TASK START
D. SCHEDULED DATE OF TASK COMPLETION
E. DATE OF TASK COMPLETION
TASK ASSIGNMENT REFERRING TO TIMETABLE FOR ENGINEERS
ST311
ST312
ASSIGNMENT ACCEPTED ?
NO
YES
ST313
CONFIRM THAT SCHEDULED DATES OF TASK START AND TASK COMPLETION ARE SET
END

FIG.11

Engineer ID	Importance of task		Progress of task		...	Total point
	Claim rank	Point	Delay	Point		
#1	A	5	OS	1	...	5
#2	C	1	DL	2	...	2
#3	A	5	DL	2	...	10
#4	B	3	DL	2	...	6
#5	B	3	OS	1	...	3

OS : On schedule
DL : Delayed

FIG. 12

Engineer ID	Schedule	Designed products	Years	Number of support	Responsible unit	Technical field
#1	7	AA1	8	2	Sheet feeder	Machinery
#2	5	AA1	6	1	Developer	Process
#3	10	AA1	2	0	Sheet feeder	Machinery
#4	8	AA2	6	3	Sheet feeder	Machinery
#5	9	AA1	3	2	Developer	Process
#6	10	AA1	8	2	Sheet feeder	Electricity

FIG. 13